

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE  
ON DISARMAMENT

ENDC/PV.359  
25 January 1968  
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THE UNIVERSITY  
OF MICHIGAN

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COLLECTION

FINAL VERBATIM RECORD OF THE THREE HUNDRED AND FIFTY-NINTH MEETING

held at the Palais des Nations, Geneva,  
on Thursday, 25 January 1968, at 10.30 a.m.

Chairman:

Mr. K. CHRISTOV

(Bulgaria)

GE.68-1559  
68-05114

## PRESENT AT THE TABLE

<u>Brazil:</u>	Mr. J.A. de ARAUJO CASTRO Mr. C.A. de SOUZA e SILVA Mr. E. MOREIRA HOSANNAH Mr. A. da COSTA GUIMARAES
<u>Bulgaria:</u>	Mr. K. CHRISTOV Mr. B. KONSTANTINOV
<u>Burma:</u>	U KYAW MIN
<u>Canada:</u>	Mr. E.L.M. BURNS Mr. A.G. CAMPBELL Mr. J.R. MORDEN Mr. A. BERNIER
<u>Czechoslovakia:</u>	Mr. T. LAHODA Mr. V. VAJNAR
<u>Ethiopia:</u>	Mr. A. ZELLEKE Mr. A. ABDELRAHMAN NOUR
<u>India:</u>	Mr. M.A. HUSAIN Mr. N. KRISHNAN Mr. K.P. JAIN
<u>Italy:</u>	Mr. R. CARACCILO Mr. G.P. TOZZOLI Mr. E. FRANCO Mr. F. SORO
<u>Mexico:</u>	Mr. A. GOMEZ ROBLEDO Mr. A. CARRANCO AVILA
<u>Nigeria:</u>	Alhaji SULE KOLO Mr. B.O. TONWE

Poland:

Mr. M. BLUSZTAJN  
Mr. E. STANIEWSKI  
Mr. S. DABROWA

Romania:

Mr. N. ECOBESCO  
Mr. O. IONESCO  
Mr. A. COROIANU  
Mr. C. MITRAN

Sweden:

Mr. A. EDELSTAM  
Mr. R. BOMAN

Union of Soviet Socialist  
Republics:

Mr. A.A. ROSHCIN  
Mr. O.A. GRINEVSKY  
Mr. V.V. SHUSTOV  
Mr. V.B. TOULINOV

United Arab Republic:

Mr. O. SIRRY  
Mr. M. SHAKER

United Kingdom:

Mr. I.F. PORTER  
Mr. R.I.T. CROMARTIE

United States of America:

Mr. A.S. FISHER  
Mr. S. DePALMA  
Mr. L.D. WEILER  
Mr. C.G. BREAM

Special Representative of the  
Secretary-General:

Mr. D. PROTITCH

Deputy Special Representative of the  
Secretary-General:

Mr. W. EPSTEIN

1. The CHAIRMAN (Bulgaria) (translation from French): I declare open the 359th plenary meeting of the Conference of the Eighteen-Nation Committee on Disarmament.
2. Mr. BLUSZTAJN (Poland) (translation from French): First of all permit me to extend a very warm welcome to the new head of the delegation of Brazil, Mr. de Araujo Castro, and to the new head of the delegation of India, Mr. Husain. I do not think there is any need to emphasize the importance we all attach to the contribution which these two delegations will be able to make to our work, especially at the present stage of our discussion. I should also like to say how pleased I am to see among us once again the head of the Mexican delegation, Mr. Gomez Robledo.
3. Our Committee has just passed an important, if not decisive, stage in its work. The Polish delegation notes with great satisfaction the submission by the co-Chairmen of identical drafts of a treaty on the non-proliferation of nuclear weapons (ENDC/192/Rev.1, 193/Rev.1). This time we have before us complete texts, and so we can take an over-all view of all the problems involved in the implementation of an international treaty prohibiting the manufacture or acquisition of nuclear weapons or devices by non-nuclear-weapon countries.
4. First of all, a general comment. We are of the opinion that the treaty in its present form confirms the principle that nuclear weapons are unlike other weapons. The adoption of the treaty on non-proliferation will be proof that there is a better knowledge, a better understanding of the atomic phenomenon. This awareness, which the whole of our discussion was bound to strengthen, will certainly have a favourable influence on the future discussion of other disarmament problems.
5. The Polish delegation has already had the opportunity of presenting its views on most of the questions with which we are concerned during the discussion held in the Committee in August 1967 (ENDC/PV.326). We then expressed our agreement with all the provisions of the draft treaty (ENDC/192, 193) which the co-Chairmen submitted to us at that time, emphasizing above all the importance of articles I and II. We particularly noted that it had at last been possible to reach agreement on a formula rendering the treaty free from loop-holes that could serve as a pretext for the proliferation of nuclear weapons. I can therefore confine myself today to a few observations suggested by the changes introduced into the new text as compared with the previous text.

(Mr. Blusztajn, Poland)

6. I shall start with the problem of control. The Polish delegation is pleased to note that the solution finally reached by the two co-Chairmen incorporates the principles which appear to us to be essential, namely that any control worthy of the name must be international, entrusted to an international organization and exercised in such a way that every State party to the treaty can have confidence in its effectiveness.

7. Article III stipulates that there shall be verification of the fulfilment of the obligations assumed under the treaty: verification by the International Atomic Energy Agency under an agreement to be negotiated and concluded between the parties to the treaty and the Agency in accordance with the Statute of the Agency and its safeguards system. The present article III does not go into all the details relating to implementation of the verification system. These details will have to be set forth in the agreements which the Vienna Agency will negotiate, within the prescribed time-limits, with the signatories to the treaty.

8. We consider that the wording of article III is sufficiently precise to preclude any interpretation that would be contrary to the objective laid down, as well as to cope with any particular situation that might arise. We can therefore be confident that the system which the Agency is called upon to apply will be capable of preventing nuclear energy from being diverted from its peaceful uses to the manufacture of nuclear weapons or other nuclear explosive devices.

9. I should like to make a few comments concerning the peaceful use of the atom within the context of the treaty. We note with satisfaction that the draft treaty submitted to us categorically confirms the inalienable right of all the contracting parties to develop research, production and use of nuclear energy for peaceful purposes, and the right to participate to the fullest possible extent in any undertaking for international co-operation in this field. We are convinced that the conclusion of the treaty on the non-proliferation of nuclear weapons will stimulate scientific research within all the signatory countries and co-operation between nations, and that it will facilitate the free movement of ideas and the exchange of scientific and technological information. It should also facilitate the implementation of programmes of assistance to the less advanced signatory countries. We interpret article IV of the draft treaty as an obligation to participate in the common task of harnessing the atom so that all countries may benefit without discrimination from all the peaceful applications of nuclear energy.

(Mr. Blusztajn, Poland)

10. That brings us to the problem of so-called peaceful nuclear explosions. I should like to say at the outset that I have no intention of questioning the sincerity or good faith of those who have here become the champions of the right of all countries to manufacture and use nuclear explosives for peaceful purposes. But I hope that, after the long discussions we have had in this Committee, they will appreciate that this is not a problem that can be solved by a simple yes or no, and that if we admitted the right of signatory countries to produce or possess nuclear devices for peaceful purposes, we should deprive the non-proliferation treaty of its substance.

11. I should like once again to stress that the right of all countries to conduct peaceful nuclear explosions is not at stake. The only matter to be settled is the procedure and the conditions to be observed so that countries which forgo the manufacture of nuclear devices shall not be deprived of the benefits that may be derived from the use of nuclear explosives. The Polish delegation considers that article V of the draft treaty should satisfy all the non-nuclear countries in that regard. We are convinced that, on that footing, unanimity can be achieved on that point in our Committee.

12. With the new article VI the declaration of intention of the contracting parties to pursue negotiations on disarmament, which appears in the preamble to the treaty, has been reinforced by a formal commitment included in the body of the treaty itself. We do not over-estimate the practical value of that addition. We are well aware that the difficulties and obstacles standing in the way of disarmament will not be overcome and disappear on the day we conclude an agreement on the non-proliferation of nuclear weapons. We are convinced, however, that the implementation of such an agreement will greatly facilitate our future task.

13. Whatever opinions we may have regarding the prospects of disarmament in the near future, we must, it seems to me, recognize that the solution of the problem of the non-proliferation of nuclear weapons constitutes an essential stage on the road which should lead us towards more substantial disarmament measures -- and this is particularly true in regard to partial disarmament measures which could be applied on a regional level. We consider that the conclusion of a treaty on non-proliferation will open up, in Europe, new possibilities for a fruitful search for ways and means to establish the security of our continent on a more solid base. Poland is ready to participate in this search with all the other countries which sincerely share its preoccupations.

(Mr. Blusztajn, Poland)

14. The Polish delegation is prepared to accept without any change the new text of the draft treaty submitted to us by the co-Chairmen. In our opinion, this new text is a definite improvement on the previous draft. It takes into account the many ideas and proposals put forward during the debate of last autumn. Of course, it has not been possible to accept all the amendments, and we are well aware of the reasons for that state of affairs. Nevertheless, the treaty submitted for our examination attempts -- in our opinion successfully -- to reconcile the differences of opinion that have emerged in our Committee, and this is one of its great merits. We do not believe that further attempts to amend it would facilitate our task.

15. We may consider that we have fulfilled the mission entrusted to us by the United Nations General Assembly. We can go before the Assembly with the feeling of work well done. The draft treaty we have to recommend for approval by all States is a good treaty. Its implementation will prevent the proliferation of nuclear weapons, open up new prospects for international co-operation in the peaceful uses of atomic energy, strengthen confidence, and stimulate the search for partial and global, regional and world-wide measures to put an end to the arms race and to promote disarmament.

16. In conclusion, the Polish delegation would like to express the hope that in the few weeks still left to us we shall give the world an example of co-operation and unanimity which will not fail to add weight to the work we have just accomplished.

17. Mr. FISHER (United States of America): At the beginning of my statement, I should like to associate the United States delegation with the words of welcome that have been extended to the representative of Brazil, and I should like to express my pleasure at being able to renew our association in this Committee. Ambassador de Araujo Castro was one of the first representatives on this Committee; he visited us briefly in 1964 on his second trip here, and he has served with great distinction on the international scene in a number of important posts. His wisdom and his experience will be of great importance in our work. It is good to have him back.

18. On 18 January (ENDC/PV.357) I discussed briefly the changes and additions in the revised draft treaties presented in identical drafts by the two co-Chairmen on that date (ENDC/192/Rev.1, 193/Rev.1).

(Mr. Fisher, United States)

19. Today, I should like to comment further on the provisions in those revised draft treaties pertaining to the application of the technology of peaceful nuclear explosions. In particular I should like to comment on the new article V and on the policies and activities of the United States which are related to that article.

20. Many statements at this Conference have affirmed that no treaty which permitted the acquisition by non-nuclear-weapon signatories of any nuclear weapons or other nuclear explosive devices would be effective against proliferation.

Many statements made at this Conference have also made it clear that no treaty which deprived non-nuclear-weapon signatories of the full benefits of peaceful applications of nuclear energy would be fair or widely accepted. These two points of view are not inconsistent; in fact, I submit, they are complementary.

21. The policy of the United States is to make available to other countries, as widely as possible, information concerning all aspects of the peaceful uses of nuclear energy. In article IV of the revised draft treaty we have made it clear that we are prepared to cast this policy in terms of a treaty obligation. In fact we have strengthened this article in the revised draft circulated on 18 January by placing a positive obligation on the parties to co-operate in contributing to the further development of the applications of nuclear energy for peaceful purposes.

22. That policy in the field of the peaceful uses of nuclear energy is also applicable to the use of nuclear explosions for peaceful purposes. In that area, of course, it must be modified to adjust to the inescapable fact that the nuclear technology involved in producing nuclear explosive devices for peaceful purposes is indistinguishable from that involved in producing nuclear weapons; but, here again, our policy has been to make available, as widely as possible, the benefits of the peaceful application of nuclear explosions. Here again we are prepared to cast our policy in terms of a treaty obligation. Article V of the revised draft transforms what was in the earlier draft (ENDC/192, 193) a preambular statement of intent into a formal commitment to share the benefits of the peaceful applications of nuclear explosions.



(Mr. Fisher, United States)

23. The United States believes that its sponsorship of the revised treaty draft containing those two articles should eliminate any question of our willingness to enter into a treaty commitment that will facilitate our policy of co-operation, not only in the entire general field of the peaceful uses of nuclear energy, but also in that part of the field which involves the uses of nuclear explosions for peaceful purposes.

24. The United States programme which is designed to develop peaceful uses of nuclear explosions is still in the early stages of development. So far no economical uses of peaceful nuclear explosions have been conclusively demonstrated; but, although many sizeable technological problems and problems of cost remain to be solved, efforts to develop applications of that technology are beginning to show real promise.

25. I think it might give this Committee a better understanding of the position of the United States in the field of peaceful nuclear explosions and of the offer which is contained in article V of the revised draft if I were to describe a particular area in which nuclear explosions might be used for peaceful purposes. An especially promising area relates to the use of underground nuclear explosions to obtain mineral and **fuel resources**.

26. In August 1967 the United States announced that it was planning to conduct its first underground nuclear detonation experiment of this kind. Project Gasbuggy is the code name for it which we use for the purpose of convenience. This was an experiment to investigate the feasibility of using nuclear explosions to stimulate production and increase ultimate recovery of natural gas from gas-bearing geological formations of low productivity. In this experiment, a contained nuclear explosion creates a large column of broken rock which, together with the attendant fracturing of rock extending outward from the column, will provide a large volume of more permeable rock through which the trapped gas can flow more easily, thereby increasing the recoverable yield of the gas.

27. A nuclear explosion was used in that experiment because its greater explosive force makes it possible to create a larger column of broken rock, and attendant fracturing outward from the column, than would be the case had conventional explosives been used. The purpose of the experiment was to determine

(Mr. Fisher, United States)

whether this larger column and greater fracturing would increase the recoverable yield to the point where it was economic and also to determine what technical problems might be presented by the presence in the gas of radioactivity produced by the explosion.

28. A technical symposium on the objectives and plans for the experiment was held last September in New Mexico. Members of the scientific and industrial community and representatives of foreign governments and international organizations were invited to attend. Two hundred and fifty people, including representatives of foreign governments and representatives of the International Atomic Energy Agency and Euratom, attended the symposium. The test itself was actually conducted on 10 December 1967.

29. Today the United States Atomic Energy Commission is announcing the preliminary technical results of that experiment. I am happy to report that the initial gas pressures and radioactivity measurements taken from a re-entry well drilled into the column of broken rock indicate that considerable amounts of gas were liberated and that the quantity and form of the radioactivity in the gas were less than anticipated.

30. At the time of the explosion, preliminary measurements indicated that the explosion was of about the energy expected, equivalent to 26,000 tons of TNT. Other measurements indicated that the column of broken rock that was created extended over 300 feet above the explosion. This height was almost precisely what was predicted in the symposium last September. Further details on the experiment Project Gasbuggy, are contained in a press release which is being issued today by the United States Atomic Energy Commission, which we have submitted as a Conference document<sup>1/</sup>.

31. Very important studies must continue for several more months before answers will be known to key questions regarding radioactivity and the ultimate increase in gas production. Those answers, as well as other detailed information from the experiment, will be made available through technical reports and other open scientific channels as soon as the information is gathered and analysed.

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<sup>1/</sup> Circulated as document ENDC/213

(Mr. Fisher, United States)

32. It will be some time before we shall be able to determine whether that first experiment was a complete success, and it will be even longer before we shall be able to determine whether such technology can be developed to a point where it is economically feasible and commercially practicable. However, there is reason to be optimistic that we shall be successful in our efforts in this field of underground nuclear engineering.

33. The United States is also pursuing a number of related research and development efforts aimed at using nuclear explosions to recover oil from oil shale and copper from low-grade ores, for nuclear excavation, and to create underground storage space for natural gas and waste materials.

34. Those experimental programmes are still in a very early developmental stage, but the United States is making progress. We plan to continue those efforts -- consistent, of course, with the limitations of the limited test-ban Treaty (ENDC/100/Rev.1) -- in order to overcome the many technological obstacles which exist. As progress is made, information on the results of our experiments will be made available to the world. Project Gasbuggy, which I have just described, represents only the most recent example of a continuing United States policy of making available information on the application of peaceful nuclear explosions. It also indicates the seriousness with which we are pursuing the development of this technology in order that the United States can be in a position to live up to the promise implied in article V of the revised draft treaty and provide nuclear explosion services as soon as possible.

35. It would be foolish to try to minimize the possible future benefits which nuclear explosions in various peaceful applications may bring; but it would be equally foolish to exaggerate the progress which has been made and to underestimate the immense and costly research and development effort still required to develop the necessary technology. About \$5 million was spent directly for the single experiment, Project Gasbuggy, which was only the latest in a ten-year old United States programme of developing the technology of the peaceful uses of nuclear explosions. To obtain any meaningful estimate of the actual cost of that ten-year programme, on which \$100 million has already been spent directly, one would have to add part of the billions of dollars spent by the United States for the nuclear weapons programme which provided the basic technology of nuclear explosives.

(Mr. Fisher, United States)

36. There is no doubt that, under article V of the revised draft treaty which we have presented, non-nuclear-weapon States will be able to take full advantage of technological developments which may come from our efforts to apply nuclear explosions to peaceful purposes. If, however, a non-nuclear-weapon State undertook to manufacture its own nuclear explosive devices for that purpose, it would have to squander its resources by spending enormous sums to develop the basic technology of nuclear explosions and, having done that, by spending other large sums on adapting that technology to peaceful uses. Moreover, as I have pointed out earlier, the acquisition of the technology of nuclear explosions would be contrary to the very concept of non-proliferation.

37. At the risk, perhaps, of repeating myself, I wish to underscore the importance of this statement, for it is an indisputable technological fact that the development and manufacture of nuclear explosive devices intended for peaceful uses is indistinguishable from the development and manufacture of nuclear weapons. Therefore, arrangements through which non-nuclear-weapon States will obtain the benefits of nuclear explosions for peaceful purposes must prohibit the acquisition of such devices or information on their design.

38. This prohibition is vital to the principle of non-proliferation, but it is by no means onerous as regards the practical use of those nuclear explosions for peaceful purposes. On the contrary, the proposal of the United States made before this Committee on 21 February 1967 (ENDC/PV.287, para. 24) for making available nuclear explosion services for peaceful purposes met with a very favourable response.

39. That is why, as certain delegations have suggested, the proposed new article contains a commitment to co-operate to insure that potential benefits from any peaceful applications of nuclear explosions will be available on a non-discriminatory basis and that the charge for the explosion service rendered by nuclear-weapon States will be kept as low as possible and will exclude the very large sums already expended -- and some still to be spent -- on research and development of the nuclear explosive devices used. To assure that no party to the treaty will be discriminated against for any reason whatsoever, we are willing to pledge that --

"... non-nuclear-weapon States Party to this Treaty so desiring may, pursuant to a special agreement or agreements, obtain any such benefits on a bilateral basis or through an appropriate international body with adequate representation of non-nuclear-weapon States."

(Mr. Fisher, United States)

40. I repeat that the charge for the explosive devices used will be as low as possible and will exclude any charge for research and development on the explosive devices used.

41. I have taken the time of the Committee to present those first findings of this experiment, perhaps in excessive detail, in order to demonstrate that we are committed to the policy of sharing as widely as possible the information on the civil engineering applications of nuclear explosions. It is only the technology of the development and production of the actual nuclear explosive device which must be withheld under the non-proliferation treaty.

42. Each non-nuclear-weapon State must of course decide for itself whether it is in its national interest and in the international interest of a safer world to give up the option to manufacture or otherwise acquire nuclear weapons. I earnestly hope that each of those States will decide to do so; but we do not intend to make that decision any more difficult by asking any country to deny itself the potential economic benefits of nuclear technology. For that reason we will continue to pursue the development of the potential applications of peaceful nuclear explosions and will see to it that our proposal in article V of this treaty to provide peaceful nuclear explosion services on a non-discriminatory basis will become a reality and will redound to the benefit of all of us.

The Conference decided to issue the following communiqué:

"The Conference of the Eighteen-Nation Committee on Disarmament today held its 359th plenary meeting in the Palais des Nations, Geneva, under the chairmanship of H.E. Ambassador Kroum Christov, representative of Bulgaria.

"Statements were made by the representatives of Poland and the United States.

"The United States delegation table a statement by the United States Atomic Energy Commission concerning the 'Gasbuggy' experiment (ENDC/213).

"The next meeting of the Conference will be held on Tuesday, 30 January 1968, at 10.30 a.m."

The meeting rose at 11.15 a.m.

